10-12-04

AF/2121

PTO/SB/17 (10-04)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

FEE TRANSMITTAL for FY 2005

Effective 10/01/2004. Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT ($) 340.00

Complete if Known	
Application Number	09/754,179
Filing Date	January 3, 2001
First Named Inventor	Nelken
Examiner Name	Bell
Art Unit	2121
Attorney Docket No.	PA1438US

METHOD OF PAYMENT *(check all that apply)*

☐ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None

☑ Deposit Account:

Deposit Account Number: 06-0600

Deposit Account Name: Carr & Ferrell LLP

The Director is authorized to: *(check all that apply)*

☑ Charge fee(s) indicated below ☑ Credit any overpayments

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FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1001	790	2001	395	Utility filing fee	
1002	350	2002	175	Design filing fee	
1003	550	2003	275	Plant filing fee	
1004	790	2004	395	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	

SUBTOTAL (1) ($)

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

	Extra Claims		Fee from below		Fee Paid
Total Claims		-20** =		X	=
Independent Claims		- 3** =		X	=
Multiple Dependent					=

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description
1202	18	2202	9	Claims in excess of 20
1201	88	2201	44	Independent claims in excess of 3
1203	300	2203	150	Multiple dependent claim, if not paid
1204	88	2204	44	** Reissue independent claims over original patent
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) ($)

**or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for *ex parte* reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	430	2252	215	Extension for reply within second month	
1253	980	2253	490	Extension for reply within third month	
1254	1,530	2254	765	Extension for reply within fourth month	
1255	2,080	2255	1,040	Extension for reply within fifth month	
1401	340	2401	170	Notice of Appeal	
1402	340	2402	170	Filing a brief in support of an appeal	340.00
1403	300	2403	150	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	
1453	1,330	2453	665	Petition to revive - unintentional	
1501	1,370	2501	685	Utility issue fee (or reissue)	
1502	490	2502	245	Design issue fee	
1503	660	2503	330	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	790	2809	395	Filing a submission after final rejection (37 CFR 1.129(a))	
1810	790	2810	395	For each additional invention to be examined (37 CFR 1.129(b))	
1801	790	2801	395	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	

Other fee (specify) _____

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) ($) 340.00

SUBMITTED BY				(Complete *(if applicable)*)	
Name (Print/Type)	Eugene G. Kim	*Registration No. (Attorney/Agent)*	46,267	*Telephone*	650.812.3400
Signature				*Date*	October 8, 2004

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This collection of information is required by 37 CFR 1.17 and 1.27. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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EV400683929US

PTO/SB/21 (02-04)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Application Number	09/754,179
Filing Date	January 3, 2001
First Named Inventor	Yoram Nelken
Art Unit	2121
Examiner Name	Meltin Bell
Total Number of Pages in This Submission: 111	Attorney Docket Number: PA1438US

ENCLOSURES *(Check all that apply)*

- [x] Fee Transmittal Form
  - [ ] Fee Attached
- [ ] Amendment/Reply
  - [ ] After Final
  - [ ] Affidavits/declaration(s)
- [ ] Extension of Time Request
- [ ] Express Abandonment Request
- [ ] Information Disclosure Statement
- [ ] Certified Copy of Priority Document(s)
- [ ] Response to Missing Parts/ Incomplete Application
  - [ ] Response to Missing Parts under 37 CFR 1.52 or 1.53
- [ ] Drawing(s)
- [ ] Licensing-related Papers
- [ ] Petition
- [ ] Petition to Convert to a Provisional Application
- [ ] Power of Attorney, Revocation Change of Correspondence Address
- [ ] Terminal Disclaimer
- [ ] Request for Refund
- [ ] CD, Number of CD(s) _____
- [ ] After Allowance communication to Technology Center (TC)
- [ ] Appeal Communication to Board of Appeals and Interferences
- [x] Appeal Communication to TC **(Appeal Notice, Brief, Reply Brief)**
- [ ] Proprietary Information
- [ ] Status Letter
- [x] Other Enclosure(s) (please Identify below):

(1) Confirmation Postcard

Remarks: Total page number does not include postcard.

Appeal Brief is 36 pages in length and submitted in triplicate.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	Carr & Ferrell LLP Cust. No. 22830
Signature	Reg. No. 46,267
Date	October 8, 2004

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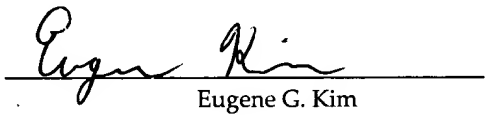
Typed or printed name			
Signature		Date	

BEFORE THE BOARD OF PATENT APPEALS AND INTEREFERENCES

APPELLANTS:	Yoram Nelken et al.
APPLICATION NO.:	09/754,179
FILING DATE:	January 3, 2001
TITLE:	System and Method for Electronic Communication Management
EXAMINER:	Meltin Bell
ART UNIT:	2121
CONFIRM. NO.:	2818
ATTY. DKT. NO.:	PA1438US

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited as **Express Mail (EV 400 683 929 US)** with the United States Postal Service in an envelope addressed to: Mail Stop Appeal Brief-Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on **October 8, 2004.**

By: 
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BRIEF ON APPEAL

Real Party in Interest Under 37 C.F.R. § 1.192(c)(1)

The real party in interest is iPhrase Technologies, Inc. of Cambridge, Massachusetts. iPhrase Technologies, Inc. acquired the entire right, title and interest in this application from Banter Limited on January 12, 2004. An assignment between the inventor and Banter Limited is recorded at Reel 11429 and Frame 154. An assignment

by and between Banter Limited and iPhrase Technologies, Inc. will be submitted for recordation prior to issue of the application.

Related Appeals and Interferences Under 37 C.F.R. § 1.192(c)(2)

For the purposes of full disclosure, Appellants note this application is *related to*, and incorporates by reference, U.S. patent application number 09/602,588, now U.S. patent number 6,408,277. U.S. patent number 6,408,277 is presently subject to an attempt to provoke an interference. A *Notification Under 37 C.F.R. § 1.607(d)* has been issued in this regard.

As the present application does *not* rely on U.S. patent number 6,408,277 for any claim of priority, it is believed this attempt to provoke an interference has no bearing—direct or otherwise—on the Board's decision in the pending appeal.

The real party in interest and its legal representatives are unaware of any other appeals and/or interferences that will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

Status of Claims Under 37 C.F.R. § 1.192(c)(3)

Claims 1-82 are pending and form the basis of the appeal. No additional claims are pending.

Status of Amendments Under 37 C.F.R. § 1.192(c)(4)

Claims 1-62 were initially filed in the application. Claims 63-82 were added pursuant to a preliminary amendment dated February 4, 2002. Appellants amended claims 1, 41, 55, 63, 78 and 82 on February 18, 2004. Those amendments were considered by the Examiner and overcame a series of 35 U.S.C. § 101 and 35 U.S.C. §112 rejections but did not overcome the Examiner's 35 U.S.C. § 103 rejections that form the basis of this appeal.

Appellants submitted an after-final response on June 4, 2004 but did not amend the claims. An advisory action dated July 27, 2004 did not indicate the non-entry of any

claims for appeal. Appellants believe the February 18, 2004 amendments to the claims are ripe for appeal.

All claims are indicated in the appendix to this appeal brief.

Summary of Invention Under 37 C.F.R. § 1.192(c)(5)

The present invention is for a system and method for electronic communication management comprising a universal data model, a modeling engine, and an adaptive knowledge base. The modeling engine includes a natural language processor and a statistical modeler. A communication is translated from its native format into the universal data model. The modeling engine determines the intent of the communication using the natural language processor and the statistical modeler. A response is generated, either automatically or by an agent. An audit module analyzes each response and provides feedback to the modeling engine and the adaptive knowledge base. The modeling engine uses the feedback to update models in the adaptive knowledge base. The modeling engine supports various application specific modules.

Issues on Appeal Under 37 C.F.R. § 1.192(c)(6)

(1) Is amended independent claim 1 and original independent claim 61 and previously presented independent claim 73 and original dependent claims 2-40 and original dependent claim 62 and previously presented claim 74-77 unpatentable under 35 U.S.C. § 103(a) over U.S. patent numbers 5,867,495 to *Elliott et al.*, 5,371,807 to *Register et al.*, 5,878,385 to *Bralich et al.* and 5,745,652 to *Bigus*?

(2) Is amended independent claim 41 and original independent claim 60 and original dependent claims 42-54 unpatentable under 35 U.S.C. § 103(a) over U.S. patent numbers 5,867,495 to *Elliott et al.*, 5,371,807 to *Register et al.*, 5,878,385 to *Bralich et al.* and 5,890,142 to *Tanimura et al.*?

(3) Is amended independent claim 55 and original claim 59 unpatentable under 35 U.S.C. § 103(a) over U.S. patent numbers 5,867,495 to *Elliott et al.*, 5,371,807 to *Register et al.*, 5,878,385 to *Bralich et al.* and 5,745,652 to *Bigus*?

(4) Is amended claim 56 and original dependent claims 57-58 unpatentable under 35 U.S.C. § 103(a) over U.S. patent numbers 5,867,495 to *Elliott et al.*, 5,371,807 to *Register et al.*, 5,878,385 to *Bralich et al.* and 5,890,142 to *Tanimura et al.*?

(5) Is amended independent claim 63 and previously presented dependent claims 64-72 unpatentable under 35 U.S.C. § 103(a) over U.S. patent numbers 5,867,495 to *Elliott et al.*, 5,371,807 to *Register et al.*, 5,878,385 to *Bralich et al.*, 5,745,652 to *Bigus, 5,493,677 to Balogh et al.* and 5,890,142 to *Tanimura et al.*?

(6) Are amended independent claims 78 and 82 and previously presented dependent claims 79-81 unpatentable under 35 U.S.C. § 103(a) over U.S. patent numbers 5,867,495 to *Elliott et al.*, 5,371,807 to *Register et al.*, 5,878,385 to *Bralich et al.*, 5,745,652 to *Bigus, 5,493,677 to Balogh et al.* and 5,890,142 to *Tanimura et al.*?

Grouping of Claims Under 37 C.F.R. 1.192(c)(7)

The claims on appeal are grouped as follows:

Group I:	Claims 1, 2-40, 61, 62, 73, 74-77
Group II:	Claims 41, 42-54, 60
Group III:	Claims 55 and 59
Group IV:	Claims 56, 57-58
Group V:	Claims 63, 64-72
Group VI:	Claims 78, 79-81, 82

These groupings of claims correspond to the issues on appeal as noted under 37 C.F.R. § 1.192(c)(6). For the purposes of this appeal, Appellants note the following claims are representative of each grouping and should be considered for the purposes of deciding this appeal.

Group I:	Claim 1
Group II:	Claim 41
Group III:	Claim 55
Group IV:	Claim 56
Group V:	Claim 63
Group VI:	Claim 78

Argument Under 37 C.F.R. § 1.192(c)(8)

Is amended independent claim 1 and original independent claim 61 and previously presented independent claim 73 and original dependent claims 2-40 and original dependent claim 62 and previously presented claim 74-77 unpatentable under 35 U.S.C. § 103(a) over U.S. patent numbers 5,867,495 to *Elliott et al.*, 5,371,807 to *Register et al.*, 5,878,385 to *Bralich et al.* and 5,745,652 to *Bigus*?

Claim 1 is representative of the group of claims identified as Group I and recites:

> A system for electronic communication management comprising:
> a contact center configured to send and receive communications;
> a modeling engine configured to analyze a communication received by the contact center and determine an intent of the received communication;
> an adaptive knowledge base configured to store models; and
> a feedback module configured to analyze a response to the received communications and provide feedback to the modeling engine, which uses the feedback to update the models in the adaptive knowledge base.

Appellants' claim 1 exhibits the modeling engine's analysis of communications received by the contact center. This relationship is not disclosed or suggested by *Elliott*, which the Examiner asserts to teach applicants' contact center and modeling engine limitations.

The Examiner cites col. 197, l. 7-14 of *Elliott* as teaching a contact center and col. 22, l. 29-41 as teaching a modeling engine. The Examiner has not cited any portion of *Elliott* disclosing an arrangement, however, where the equivalent of a customer service center analyzes received communications. Col. 197, l. 7-14 only teaches that customer calls may be routed to regional customer service centers based on loading considerations, and fails to disclose or suggest in any way that customer calls (*i.e.*, communications) received by the regional customer contact centers are analyzed by a modeling engine or equivalent structure to determine an intent. *Elliott* does not discuss

any mechanism for analyzing the received customer calls but, instead, a context server that "accepts network event records and service event records . . . and allows for queries against the data." Thus, *Elliott* does not analyze the communication, but merely allows for a query against the data in the server. Simply put, *Elliott* does not disclose any processing which is dependent on the content of the communication. Analyzing the content is not anticipated by *Elliott* because the context and framework of the *Elliott* invention does not allow for the analysis of the content of a communication.

Elliott, as cited by the Examiner (col. 22, l. 29-41), also fails to disclose a modeling engine. *Elliott* discloses two functional components of an ISP architecture: an analysis services component—"a special kind of service engine . . . based on adding value based upon network statistics or call context information in real time or near real time" and an other special services component, which "entail[s] other specialized forms of applications or services that may or may not be based on the Service Engine model."

These structures cannot be construed as Appellants' claimed modeling engine that denotes a program that generates models—data structures representative of real-world objects such as email communications. The Appellants' modeling engine builds data structures identifying key concepts in the communications and the relationship between the concepts (*e.g.*, page 15, l. 5-13 of the Application). *Elliott* does not disclose the analysis services component or the other special services component generating models; that the other special services module "entail[s] other specialized forms of applications or services that may or may not be based on the Service Engine model" does not, by itself, teach the use of a modeling engine.

Further, as to Appellants' claim language to "determine an intent of the received communication," the Examiner relies on *Elliott* at col. 68, l. 14-23 that, upon a closer reading, merely discuss converting text messages to speech. Appellants assert converting text messages to speech is not the equivalent of determining the intent of the received communication.

Appellants also claim "an adaptive knowledge base configured to store models" that are updatable using feedback. The Examiner contends *Register* teaches this adaptive

knowledge base. The element in *Register* that the Examiner equates to be the adaptive knowledge base—domain specific knowledge base—does not store system created models of different types of data that are updatable by feedback. The "information stored in the knowledge base is provided by an applications programmer who is charged with developing the application" and consists of modules such as a lexicon and a rule base. Col. 4, l. 41-44.

Additionally, claim 1 recites "a feedback module configured to ***analyze a response*** to the received communication and provide feedback to the modeling engine, which uses the feedback to update the models." The Examiner contends *Register* teaches a "modeling engine using feedback" at Figs. 1 and 3; col. 3, l. 37-51. While *Register* may provide a feedback module, the feedback module of *Register* only analyzes input text and not responses to communications. Further, *Register* does not provide a modeling engine that receives the feedback and uses the feedback to update the models in the adaptive knowledge base.

As to *Bigus*, the Examiner notes the reference to teach a "modeling engine using feedback." *Bigus*, however, is directed to resource allocation using neural networks; Appellants fail to see how resource allocation is related to providing feedback to a modeling engine that uses the feedback to update models in the adaptive knowledge base.

The Appellants similarly traverse the Examiner's contention that it would be obvious to one of ordinary skill in the art to combine *Elliott*, *Register*, and *Bralich* to produce the claimed invention. First, *Elliott* should not be considered analogous prior art as *Elliott* concerns routing, billing, monitoring, and reporting of calls in a hybrid switched/IP network. In this regard, *Elliott* is unrelated to the present invention's generation and adaptation of models to analyze and automatically respond to communications in a contact center environment. As such, *Elliott* is not pertinent art and an obviousness rejection in reliance of *Elliott* is improper.

The Examiner has also failed to show the requisite motivation to combine the features of *Elliott* with *Register* and *Bralich*. *Elliott*'s problem of routing and

administering calls in a hybrid network contrasts the computer-based methods for parsing and classifying natural language texts as in *Register* and *Bralich*. *Elliott* does not mention transmission or analysis of communications in the form of natural language texts making it unclear why one of ordinary skill in the art would modify the network of *Elliott* with the natural language processing tools of *Register* and *Bralich*. Examiner's proffered motivations—"increasing management and control abilities," "better accuracy," "decreasing costs without compromising quality," and "speeding up computation"—represent abstract objectives and not concrete suggestions of how the proposed combination might solve specific problems. As such, the Appellants contend there to be an absence of any motivation to combine *Elliott*, *Register* and *Bralich* and any suggestion to the contrary represents impermissible hindsight reconstruction by the Examiner.

For these reasons, claim 1 is not obvious over the cited prior art and is allowable. Additionally, because claims 2-40 depend from claim 1, these claims are allowable for, at least, the same reasons as set forth in claim 1. Claims 61 and 73, being similar to claim 1, should also be allowable for the reasons cited in the context of claim 1 in addition to their related dependent claims 62 and 74-77, respectively.

Is amended independent claim 41 and original independent claim 60 and original dependent claims 42-54 unpatentable under 35 U.S.C. § 103(a) over U.S. patent numbers 5,867,495 to *Elliott et al.*, 5,371,807 to *Register et al.*, 5,878,385 to *Bralich et al.* and 5,890,142 to *Tanimura et al.*?

Claim 41 is representative of the group of claims identified as Group II and recites:

A method for electronic communication management in a computer network, comprising the steps of:

receiving a communication over the computer network;

analyzing the communication at a computer attached to the computer network to determine an intent;

predicting a response to the communication based on the intent, producing a predicted response;

preparing a response to the communication, producing an actual response; and

comparing the actual response to the predicted response to improve subsequent predictions.

Claim 41 and dependent claims 42-54 as well as independent claim 60 should be allowed over the Examiner's rejections for at least three reasons: (i) *Elliott* does not teach or suggest analyzing the communication at a computer attached to the computer network to determine an intent; (ii) *Tanimura* does not teach or suggest predicting a response to the communication based on the intent, producing a predicted response; preparing a response to the communication, producing an actual response; and comparing the actual response to the predicted response to improve subsequent predictions; and (iii) no motivation exists to combine the teachings of *Elliott* with those of *Tanimura, Register* and *Bralich.*

As evidenced, above, Claim 41 recites a step of "analyzing the communication at a computer attached to the computer network to determine an intent." The Examiner argues this step to be taught by *Elliott* at col. 22, l. 29-41. This cited portion of *Elliott* sets forth a highly generalized description of the analysis services and other special services functional components of an ISP platform. With respect to these analysis services, *Elliott* discloses only that the component "add[s] value based upon network statistics or call context information in real time or near real time." It is unclear how this statement could be construed as disclosing or suggesting the claimed step of analyzing a communication to determine an intent.

Claim 41 further recites, "predicting a response to the communication based on the intent, producing a predicted response," "preparing a response to the communication, producing an actual response," and "comparing the actual response to the predicted response to improve subsequent predictions." Appellants traverse the Examiner's argument that *Tanimura* teaches the foregoing. *Tanimura* is directed to an apparatus for monitoring a complex dynamic system (which *Tanimura* exemplifies as a brain and a turbine) and detecting, using an application of deterministic chaos theory, whether the system is in an abnormal condition as evidenced by the Examiner's citation to col. 1, l. 53 to col. 2, l. 4. This reading of *Tanimura* does not teach the claimed elements

of the present application. *Tanimura,* at col. 1., l. 53-58, discloses "data vectors whose parameter is determined by the timeseries data of the data storage section" and subsequently comparing the actual value to the predicted value to determine if an abnormal condition exists. The derivation of predicted data and comparison to actual data, as performed in *Tanimura,* is not the equivalent of, and is distinguishable from, the Appellants' claimed sequence of predicting **a response to a communication based on an intent.**

Tanimura also fails, despite the Examiner's suggestion, to **prepare an actual response to the communication.** The Examiner cites col. 1, l. 66 to col. 2, l. 4 for support that *Tanimura* teaches, "preparing a response to the communication." This section, upon closer reading, only refers to "execut[ing] a decision of the abnormality according to the condition of the observation system." There is no discussion of preparing a response to the communication and producing an actual response.

Tanimua also fails to teach **comparing the actual response to the predicted response.** The Examiner references col. 1, l. 58-65 of *Tanimura* in asserting the teaching of "comparing the actual response to the predicted response to improve subsequent predictions." This portion of *Tanimura,* however, refers to comparing "the detected value and the predicted value of the timeseries data and decides the condition of the observed system according to the compared result." Determining the condition of a system is not equivalent to improving subsequent predictions as claimed in Appellants' claim 41.

Finally, regarding the Examiner's argument that *Register* teaches improving subsequent predictions, Appellants traverse. *Register* does not improve subsequent predictions based on a comparison of "the actual response to the predicted response" to a communication based on intent.

Appellants also traverse the Examiner's contention that it would be obvious to one of ordinary skill in the art to combine the teachings of *Elliott , Tanimura, Register,* and *Bralich* to produce the claimed invention. As noted in the context of claim 1, Appellants contend *Elliott* is not analogous prior art. The relationship of *Tanimura* to the claimed

invention is also questionable as *Tanimura* is directed to a wholly unrelated problem solved by Appellants' claimed invention. *Tanimura* concerns monitoring dynamic system behavior (*e.g.*, shaft vibrations of a turbine) and determining if an abnormal condition is present by comparing actual measured data with predicted data. *Tanimura* is not concerned with the generation and adaptation of models to analyze and automatically respond to communications in a contact center environment as is the case in Appellants' claimed invention. As such, *Tanimura*—and *Elliott*—are not analogous art on which the Examiner may rely for an obviousness rejection.

There is also a lack of motivation to combine the features of *Elliott, Tanimura, Register,* and *Bralich.* The Examiner, too, has failed to provide evidence of such motivation. *Register* and *Bralich* are computer-based methods for parsing and classifying natural language texts. *Elliott* and *Tanimura* do not mention transmission or analysis of natural language communications. It is, therefore, unclear why one of ordinary skill in the art would be motivated to modify the network of *Elliott* with the natural language processing tools of *Register* and *Bralich* in further view of the fact that *Elliott*'s network and *Tanimura*'s monitoring system do not concern transmission and analysis of natural language text.

The Examiner's alleged motivation to combine—"increasing management and control abilities," "better accuracy," "decreasing costs without compromising quality" and "speeding up computation"—represent highly abstract objectives common to any enterprise rather than concrete suggestions or reasoning of how the cited references may be combined to solve specific problems. In the absence of any demonstrated suggestion or motivation to combine references, the Examiner's four-reference combination constitutes impermissible hindsight reconstruction.

For these reasons, claim 41 is not obvious over the cited prior art and is allowable. Additionally, because claims 42-54 depend from claim 41, these claims are allowable for, at least, the same reasons as set forth in claim 41. Claim 60, being similar to claim 41, should also be allowable for the reasons cited in the context of claim 1.

Is amended independent claim 55 and original claim 59 unpatentable under 35 U.S.C. § 103(a) over U.S. patent numbers 5,867,495 to *Elliott et al.*, 5,371,807 to *Register et al.*, 5,878,385 to *Bralich et al.* and 5,745,652 to *Bigus*?

Claim 55 is representative of the claims identified as being a part of Group III and recites:

> A method for processing a relationship event in a computer network, comprising the steps of:
>
> receiving the relationship event over the computer network;
>
> analyzing the relationship event at a computer attached to the computer network to identify concepts in the relationship event;
>
> building an event model of the relationship event using the concepts;
>
> mapping the event model to models in a knowledge base to produce category scores; and
>
> routing the relationship event for action based on the category scores.

Claim 55 recites, "receiving the relationship event" and "analyzing the relationship event... to identify concepts in the relationship event." The Examiner contends "receiving the relationship event" to be disclosed at col. 120, l. 9-11 of *Elliott* wherein he equates the claimed 'relationship event' to the "network event" of *Elliott*. Despite the 'relationship event' of Appellants' claimed invention being explicitly defined as "any communications between the organization and other external or internal entities" (p. 9, l. 19-20), even a generous interpretation of *Elliott*'s supposedly analogous 'network events' is ultimately hindered by the reference's failure to teach analyzing the network event to identify concepts therein. The Examiner's support for such analysis is identified as col. 73, l. 42 to col. 74, l. 19 but, in fact, is nothing more than a general discussion of the principles of derived objects in object-oriented programming. As such, *Elliott* does not disclose or suggest the process of analyzing network events to identify concepts.

Appellants' claim 55 additionally recites, "building an event model of the relationship event using the concepts." The Examiner's citation to col. 39, l. 56 to col. 40, l. 25 of *Elliott* as disclosing this element is flawed as this cited portion is directed to a Resource Management Model that defines common architectural guidelines for the ISP

architecture. There is a total absence of discussion as to building an event model of the network event (the Examiner's asserted equivalent of the relationship event) using concepts identified in the network event. As such, Appellants respectfully submit that "building an event model of the relationship event using the concepts" is not in fact disclosed by *Elliott*.

Finally, the Examiner again fails to show any motivation, much less the requisite motivation, to combine *Elliott* with *Register* and *Bigus*. As previously discussed, *Elliott* concerns routing and administering calls in a hybrid network while *Register* is directed to computer-based methods for parsing and classifying natural language texts; *Bigus* is directed to resource allocation. One of ordinary skill in the art would not be motivated to modify the network of *Elliott* with the natural language processing of *Register* as the network of *Elliott* does not involve transmission and analysis of natural language texts. The relationship of *Bigus* to this combination is even more awkward. The absence of any demonstrated motivation to combine *Elliott, Register,* and *Bigus,* in fact, suggests nothing more than impermissible hindsight reconstruction thereby defeating any determination of obviousness.

In sum, the rejection of claim 55 as being unpatentable over *Elliott* in view of *Register* and *Bigus* is improper because: (i) *Elliott* fails to teach "analyzing the relationship event... to identify concepts in the relationship event"; (ii) *Elliott* does not teach "building an event model of the relationship event using the concepts"; and (iii) no motivation exists to combine the teachings of *Elliott, Register,* and *Bigus.* For at least these reason, claim 55 should be allowed. Claim 59, being related in scope to claim 55, should be allowed for, at least, the same reasons.

Is amended claim 56 and original dependent claims 57-58 unpatentable under 35 U.S.C. § 103(a) over U.S. patent numbers 5,867,495 to *Elliott et al.*, 5,371,807 to *Register et al.*, 5,878,385 to *Bralich et al.* and 5,890,142 to *Tanimura et al.*?

Claim 56 is representative of the claims identified as belonging to Group IV and recites:

> A computer-readable medium having embodied thereon a program, the program being executable by a computer to perform method steps for electronic communication management, the method steps comprising:
>
> receiving a communication;
>
> analyzing the communication to determine intent;
>
> predicting a response to the communication based on the intent, producing a predicted response;
>
> preparing a response to the communication, producing an actual response; and
>
> comparing the actual response and the predicted response to improve subsequent predictions.

Independent claim 56 and dependent claims 57-58 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Elliott* in view of *Tanimura, Register,* and *Bralich.* Claim 56 is a close analog of claim 41, and Applicants traverse the rejections of claim 56 and dependent claims 57-58 for, at least, the same reasons discussed above in connection with claim 41.

Is amended independent claim 63 and previously presented dependent claims 64-72 unpatentable under 35 U.S.C. § 103(a) over U.S. patent numbers 5,867,495 to *Elliott et al.*, 5,371,807 to *Register et al.*, 5,878,385 to *Bralich et al.*, 5,745,652 to *Bigus*, 5,493,677 to *Balogh et al.* and 5,890,142 to *Tanimura et al.*?

Claim 63 is representative of the claims of Group V and recites:

> A method for computerized analysis of communications using computer-generated adaptive models, comprising the steps of:
> receiving a communication;
> analyzing content of the communication on a computer to identify at least one concept of the communication;
> creating a model of the communication using the at least one concept;
> comparing the model of the communication to a set of adaptive models to produce a predicted response to the communication;
> preparing an actual response to the communication;
> comparing the predicted response and the actual response to produce feedback; and
> using the feedback to modify at least one of the set of adaptive models such that the set of adaptive models learns with each received communication.

Independent claim 63 and dependent claims 64-72 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Elliott* in view of *Tanimura, Register* and further in view of *Balogh* and *Bigus*. Appellants traverse these rejections.

Claim 63 recites "analyzing content of the communication on a computer to identify at least one concept of the communication." The Examiner argues this element to be taught by *Elliott* at col. 22, l. 29-41. The cited portion of *Elliott*, however, only sets forth a highly generalized description of the analysis services and other special services functional components of an ISP platform. With respect to the analysis services component, *Elliott* discloses only that the component "add[s] value based upon network statistics or call context information in real time or near real time." This does not amount to teaching the Appellants' claimed step of analyzing content of the communication on a computer to identify at least one concept of the communication. Similarly, the description of the other special services component does not include any text would could be construed as teaching the aforementioned step.

Claim 63 further recites "creating a model of the communication using the at least one concept." The Examiner again relies on *Elliott,* this time referring to col. 39, l. 56 to col. 40, l. 25. This portion of *Elliott* concerns a Resource Management Model that defines common architectural guidelines for the ISP architecture and lacks any discussion of creating a model of a communication using identified concepts in the communication. Therefore, Appellants' "creating a model of the communication using the at least one concept" is not disclosed by *Elliott.*

Claim 63 also recites "comparing the model of the communication to a set of adaptive models to produce a predicted response to the communication," "preparing an actual response to the communication," and "comparing the predicted response and the actual response to produce feedback." Appellants disagree with the Examiner's argument that *Tanimura* teaches the foregoing steps as *Tanimura* concerns an apparatus for monitoring a complex dynamic system and detecting, using an application of deterministic chaos theory, whether the system is in an abnormal condition. Notwithstanding, the Examiner cites to col. 1, l. 53 to col. 2, l. 4 of *Tanimura* to support his position that *Tanimura* teaches the claimed elements of the Appellants' invention. Appellants contend *Tanimura,* instead, discloses deriving a predicted value of time series data, measuring an actual value of time series data and comparing the actual value to the predicted value to determine if an abnormal condition exists. This derivation, measurement and comparison is not the equivalent to Appellants' claimed sequence of producing a predicted response to a communication by comparing a model of the communication to a set of adaptive models, preparing an actual response to the communication, and producing feedback by comparing the actual/predicted response to the communication.

The Examiner has also failed to show the requisite motivation to combine *Elliott* with *Tanimura, Register, Bralich, Bigus,* and *Balogh.* As has been previously established, *Register* and *Bralich* concern computer-based methods for parsing and classifying natural language texts; *Balogh* discloses an image archiving and retrieval process that utilizes natural language processing to identify concepts in user queries; *Bigus* teaches a neural-

net based controller for dynamically allocating resources in a computer system and is not even in a field reasonably pertinent to that of the claimed invention. *Elliott* does not discuss transmission or analysis of communications in the form of natural language texts making it unclear why one of ordinary skill in the art would be motivated to modify the network of *Elliott* with the natural language processing tools of *Register, Bralich,* and *Balogh.* This lack of clarity is further evidenced by the fact that the operation of the network of *Elliott* and the monitoring system of *Tanimura* do not involve the transmission and analysis of natural language texts.

Appellants, again, address the Examiner's alleged motivation for constructing this rejection—"increasing management and control abilities," "better accuracy," "decreasing costs without compromising quality" and "speeding up computation"—as being representative of abstract objectives and not concrete suggestions of how the teachings of these six references might solve the specific problems proffered by the Appellants. The absence of such a demonstrated suggestion or motivation to combine references, in turn, constitutes impermissible hindsight reconstruction and does not support a determination of obviousness.

For at least these reasons, Appellants submit that claims 63-72 are not made obvious by the prior art relied on by the Examiner.

Are amended independent claims 78 and 82 and previously presented dependent claims 79-81 unpatentable under 35 U.S.C. § 103(a) over U.S. patent numbers 5,867,495 to *Elliott et al.*, 5,371,807 to *Register et al.*, 5,878,385 to *Bralich et al.*, 5,745,652 to *Bigus*, 5,493,677 to *Balogh et al.* and 5,890,142 to *Tanimura et al.*?

Claim 78 is representative of the claims of Group VI and recites:

> A method for real-time learning in a computerized communication management system, comprising the steps of:
> receiving a communication;
> creating a model of the communication on a computer;
> comparing the model of the communication to a set of adaptive models to produce a predicted action in response to the communication;
> comparing the predicted action with an actual action in response to the communication to produce feedback; and
> updating the set of adaptive models according to the feedback.

Independent claim 78 and dependent claims 79-81 stand rejected under under 35 U.S.C. §103(a) as being unpatentable over *Elliott* in view of *Tanimura, Bigus, Register, Bralich* and *Balogh*. Appellants traverse these rejections.

Claim 78 recites "creating a model of the communication." The Examiner, in rejecting claim 78, relies on col. 22, l. 29-41 and col. 39, l. 56 to col. 40, l. 25 of *Elliott* but the cited portions, in fact, disclose a highly generalized description of the analysis services and other special services functional components of an ISP platform, and a brief description of a Resource Management Model that defines common architectural guidelines for the ISP architecture. The cited portions lack any discussion of creating a model of a communication. Therefore, Appellants submit that "creating a model of the communication" is not in fact disclosed or suggested by *Elliott*.

Claim 78 also recites "comparing the model of the communication to a set of adaptive models to produce a predicted action in response to the communication" and "comparing the predicted action with an actual action in response to the communication to produce feedback." The Examiner contends *Tanimura* to teach these steps. But recall, as noted above, *Tanimura* is directed to an apparatus for monitoring a complex dynamic system and detecting, using an application of deterministic chaos theory, whether the system is in an abnormal condition. Despite this fundamental difference, the Examiner

cites col. 1, l. 53 to col. 2, l. 4 of *Tanimura* as support for this position. Appellants contend, however, that this portion of *Tanimura* discloses deriving a predicted value of timeseries data, measuring an actual value of timeseries data, and comparing the actual value to the predicted value to determine if an abnormal condition exists. The derivation of predicted data and comparison to actual data, as performed in *Tanimura,* is not the equivalent of, and is easily distinguishable from, the claimed sequence of producing a predicted action in response to the communication based on comparing the model of the communication to a set of adaptive models, and comparing the predicted action with an actual action.

The Examiner has also failed to show the requisite motivation to combine the features of six references: *Elliott* with *Tanimura, Register, Bralich, Bigus,* and *Balogh.* As noted above, *Register* and *Bralich* are directed to computer-based methods for parsing and classifying natural language texts; *Balogh* is directed to an image archiving and retrieval process that utilizes natural language processing to identify concepts in user queries; and, *Bigus* is directed to a neural-net based controller for dynamically allocating resources in a computer system. Further, *Elliott* does not mention transmission or analysis of communications in the form of natural language texts. It is unclear why one of ordinary skill in the art would be motivated to modify the network of *Elliott* with the natural language processing tools of *Register, Bralich,* and *Balogh* in view of the fact that the operation of the network of *Elliott* and of the monitoring system of *Tanimura* do not involve the transmission and analysis of natural language texts.

Appellants also argue, again, that the alleged motivation offered by the Examiner—"increasing management and control abilities," "better accuracy," "decreasing costs without compromising quality" and "speeding up computation"—represent abstract objectives, rather than concrete suggestions of how the teachings may be combined to solve specific problems. In the absence of any demonstrated suggestion or motivation to combine references, the combination of features from *Elliott, Tanimura, Register, Bralich, Bigus,* and *Balogh* by the Examiner constitutes impermissible hindsight reconstruction and does not support a determination of obviousness.

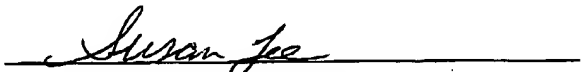
For at least the foregoing reasons, Appellants submit that claims 78-81 are not made obvious by the prior art relied on by the Examiner. Independent claim 82 is submitted to be patentable over the prior art of record for substantially the same reasons as those advanced above in connection with claim 78.

CONCLUSION

In accordance with the above remarks, Appellants believe that the Examiner's rejections as to all claims are fully overcome and that the Board of Patent Appeals and Interferences should remand the application with instructions to issue a *Notice of Allowance*.

Respectfully Submitted,
Yoram Nelken et al.

October 8, 2004

By: 

Susan Yee, Reg. No. 41,388
Carr & Ferrell *LLP*
2200 Geng Road
Palo Alto, CA 94303
Phone: (650) 812-3400
Fax: (650) 812-3444

Appendix Under 37 C.F.R. § 1.192(c)(9)

1. A system for electronic communication management comprising:

a contact center configured to send and receive communications;

a modeling engine configured to analyze a communication received by the contact center and determine an intent of the received communication;

an adaptive knowledge base configured to store models; and

a feedback module configured to analyze a response to the received communication and provide feedback to the modeling engine, which uses the feedback to update the models in the adaptive knowledge base.

2. The system of claim 1, wherein the contact center is configured to send and receive communications via text-based communication channels.

3. The system of claim 1, wherein the contact center is configured to send and receive communications via a voice-based communication channel.

4. The system of claim 1, wherein the contact center is configured to receive text communications containing natural language.

5. The system of claim 4, wherein the modeling engine includes a natural language processor configured to analyze the text communications to identify concepts.

6. The system of claim 5, wherein the natural language processor performs a morphological analysis of the text communications.

7. The system of claim 5, wherein the natural language processor performs a semantic analysis of the text communications.

8. The system of claim 5, wherein the natural language processor includes a lexical knowledge base.

9. The system of claim 1, further comprising an automatic response module that generates the responses to the received communications.

10. The system of claim 1, wherein the responses to the received communications are generated by agents.

11. The system of claim 1, wherein the contact center converts received communications into a universal data model format.

12. The system of claim 1, further comprising an audit module that monitors responses generated by agents for quality.

13. The system of claim 12, wherein the audit module produces an audit result that is fed back to the modeling engine.

14. The system of claim 1, wherein each of the models in the adaptive knowledge base includes an accuracy gauge that is updated by feedback.

15. The system of claim 14, wherein the adaptive knowledge base includes models for active concepts and models for inactive concepts.

16. The system of claim 15, wherein the models for active concepts become inactive when they have a sufficiently low accuracy rating.

17. The system of claim 15, wherein the models for inactive concepts become active when they have a sufficiently high accuracy rating.

18. The system of claim 1, wherein the models in the adaptive knowledge base are organized into categories and the categories are associated with branches.

19. The system of claim 18, wherein the modeling engine modifies the branches in the adaptive knowledge base using the feedback from the feedback module.

20. The system of claim 18, wherein hierarchies of the branches in the adaptive knowledge base are created manually.

21. The system of claim 18, wherein hierarchies of the branches in the adaptive knowledge base are created automatically.

22. The system of claim 18, wherein the branches in the adaptive knowledge base have associated rules.

23. The system of claim 1, wherein the modeling engine includes a statistical modeler that creates the models and performs relationship algebra using the models.

24. The system of claim 1, wherein the modeling engine automatically retrieves data based on the intent of the received communication.

25. The system of claim 24, wherein an automatic response module supported by the modeling engine generates a response to the received communication using the retrieved data.

26. The system of claim 24, wherein an agent composes a response to the received communication using the retrieved data.

27. The system of claim 1, wherein the modeling engine supports an application specific module.

28. The system of claim 27, wherein the application specific module is an automatic response module.

29. The system of claim 27, wherein the application specific module is an expertise routing module.

30. The system of claim 27, wherein the application specific module is an automatic task prioritization module.

31. The system of claim 27, wherein the application specific module is a content filter module that filters content of agent-generated responses.

32. The system of claim 27, wherein the application specific module is a business process automation module.

33. The system of claim 27, wherein the application specific module is a workflow application.

34. The system of claim 27, wherein the application specific module is a Frequently Asked Questions module.

35. The system of claim 27, wherein the application specific module generally classifies the received communications according to content.

36. The system of claim 2, further comprising a digital signal processing module configured to process received voice communications.

37. The system of claim 36, wherein the digital signal processing module categorizes the received voice communications according to acoustical content of the received voice communications.

38. The system of claim 1, wherein the feedback module is further configured to support multiple feedbacks to a single received communication.

39. The system of claim 1, wherein the received communications include documents.

40. The system of claim 39, wherein a statistical matching value between the documents and the models is evaluated by a calculated statistical likelihood value.

41. A method for electronic communication management in a computer network, comprising the steps of:

receiving a communication over the computer network;

analyzing the communication at a computer attached to the computer network to determine an intent;

predicting a response to the communication based on the intent, producing a predicted response;

preparing a response to the communication, producing an actual response; and

comparing the actual response to the predicted response to improve subsequent predictions.

42. The method of claim 41, further comprising the step of routing the communication based on semantical content of the communication.

43. The method of claim 41, wherein the communication is expressed in natural language.

44. The method of claim 41, wherein the step of predicting a response to the communication includes comparing the communication to a model.

45. The method of claim 41, wherein the step of preparing a response is performed by an automatic response module.

46. The method of claim 41, wherein the step of preparing a response is performed by an agent.

47. The method of claim 41, wherein the communication is a text communication containing natural language.

48. The method of claim 47, wherein the step of analyzing the communication includes morphological analysis and semantic analysis.

49. The method of claim 41, wherein the step of predicting a response to the communication includes comparing the communication to a set of models that corresponds to a category related to the intent.

50. The method of claim 41, wherein the step of comparing the actual response and the predicted response produces feedback that is used to modify a model.

51. The method of claim 50, where if the actual response is substantially the same as the predicted response, the feedback is positive, and if the actual response is substantially different from the predicted response, the feedback is negative.

52. The method of claim 41, wherein the communication is a voice communication expressed in natural language.

53. The method of claim 52, wherein the step of analyzing the communication includes digital signal processing of the voice communication.

54. The method of claim 53, wherein the step of predicting a response to the communication includes categorizing the voice communication based on acoustical content of the voice communication.

55. A method for processing a relationship event in a computer network, comprising the steps of:

receiving the relationship event over the computer network;

analyzing the relationship event at a computer attached to the computer network to identify concepts in the relationship event;

building an event model of the relationship event using the concepts;

mapping the event model to models in a knowledge base to produce category scores; and

routing the relationship event for action based on the category scores.

56. A computer-readable medium having embodied thereon a program, the program being executable by a computer to perform method steps for electronic communication management, the method steps comprising:

receiving a communication;

analyzing the communication to determine intent;

predicting a response to the communication based on the intent, producing a predicted response;

preparing a response to the communication, producing an actual response; and

comparing the actual response and the predicted response to improve subsequent predictions.

57. The computer-readable medium of claim 56, wherein the step of comparing the actual response and the predicted response occurs in real time.

58. The computer-readable medium of claim 56, wherein the step of comparing the actual response and the predicted response occurs off-line.

59. A computer-readable medium having embodied thereon a program, the program being executable by a computer to perform method steps for processing a relationship event, the method steps comprising:

receiving the relationship event;

analyzing the relationship event to identify concepts in the relationship event;

building an event model of the relationship event using the concepts;

mapping the event model to models in a knowledge base to produce category scores; and

routing the relationship event for action based on the category scores.

60. A system for electronic communication management, comprising:

means for receiving a communication;

means for analyzing the communication to determine intent;

means for predicting a response to the communication based on the intent, producing a predicted response;

means for preparing a response to the communication, producing an actual response; and

means for comparing the actual response and the predicted response to improve subsequent predictions.

61. A system for electronic communication management, comprising:

a contact center configured to send and receive communications via communication channels including telephone, facsimile, electronic mail, web forms, chat, and wireless;

a modeling engine configured to analyze a received communication to determine an intent, and further configured to retrieve data related to the intent;

an adaptive knowledge base configured to store models; and

a feedback module that compares a response predicted by the modeling engine in conjunction with the models in the adaptive knowledge base and an actual response to the received communication to generate feedback, the feedback being used to update the models in the adaptive knowledge base such that the system learns from each received communication.

62. The system of claim 61, wherein the modeling engine gains knowledge from communications on one communication channel and applies the knowledge to communications on another communication channel.

63. A method for computerized analysis of communications using computer-generated adaptive models, comprising the steps of:

receiving a communication;

analyzing content of the communication on a computer to identify at least one concept of the communication;

creating a model of the communication using the at least one concept;

comparing the model of the communication to a set of adaptive models to produce a predicted response to the communication;

preparing an actual response to the communication;

comparing the predicted response and the actual response to produce feedback; and

using the feedback to modify at least one of the set of adaptive models such that the set of adaptive models learns with each received communication.

64. The method of claim 63, wherein the step of comparing the predicted response and the actual response occurs in real time.

65. The method of claim 63, wherein the step of using the feedback to modify at least one of the set of adaptive models occurs in real time.

66. The method of claim 63, wherein the step of comparing the predicted response and the actual response occurs while further communications are being received.

67. The method of claim 63, wherein the step of using the feedback to modify at least one of the set of adaptive models occurs while further communications are being received.

68. The method of claim 63, wherein the content of the communication is expressed in a natural language.

69. The method of claim 63, wherein the content of the communication includes natural language and metadata.

70. The method of claim 63, wherein the content of the communication includes natural language and structured information.

71. The method of claim 63, wherein the communication is a text communication.

72. The method of claim 63, wherein the communication is a voice communication.

73. A system for electronic communication management, comprising:

a contact center configured to send and receive communications;

an adaptive knowledge base configured to store models;

a modeling engine configured to analyze a received communication to determine an intent, to prepare a model of the communication based on the intent, and to compare the model of the communication with the models stored in the adaptive knowledge base to produce a predicted response; and

a feedback module configured to compare the predicted response with an actual response to the received communication to generate feedback used by the adaptive knowledge base to modify at least one model such that the system learns from the received communication.

74. The system of claim 73, wherein a human agent produces the actual response to the received communication.

75. The system of claim 73, wherein the adaptive knowledge base modifies at least one model in response to each communication received by the contact center such that the system learns from each received communication.

76. The system of claim 73, wherein the modeling engine is further configured to determine a plurality of intents in the received communication.

77. The system of claim 76, wherein the modeling engine is further configured to determine an explicit intent and an implicit intent in the received communication.

78. A method for real-time learning in a computerized communication management system, comprising the steps of:

receiving a communication;

creating a model of the communication on a computer;

comparing the model of the communication to a set of adaptive models to produce a predicted action in response to the communication;

comparing the predicted action with an actual action in response to the communication to produce feedback; and

updating the set of adaptive models according to the feedback.

79. The method of claim 78, wherein if the predicted action substantially matches the actual action, the feedback is positive and an accuracy rating of a model in the set of adaptive models that produced the predicted action is increased.

80. The method of claim 78, wherein if the predicted action substantially differs from the actual action, the feedback is negative and an accuracy rating of a model in the set of adaptive models that produced the predicted action is decreased.

81. The method of claim 78, wherein if the predicted action substantially differs from the actual action and if a model that substantially matches the actual action exists in the set of adaptive models, then the feedback is negative for a model in the set of adaptive models that produced the predicted action and the feedback is positive for the model that substantially matches the actual action.

82. A method for real-time learning in a computerized communication management system, comprising the steps of:

receiving a communication;

creating a model of the communication on a computer;

comparing the model of the communication to a set of adaptive models to determine a category for the communication;

comparing the determined category with an actual category for the communication to produce feedback; and

updating the set of adaptive models according to the feedback.